Exercise Incentives to Encourage Adults to Walk More in India

Researchers:

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Sector(s): Health

Sample: 6,882 adults with diabetes and hypertension

Target group: Adults

Outcome of interest: Take-up of program/social service/healthy behavior Health Cost Analysis

Intervention type: Behavioral economics Monetary incentives Technology Tracking

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Partner organization(s): Government of Tamil Nadu, Chicago Booth School of Business, Tata Centre for Development at the University of Chicago, The University of Chicago Trust, National Science Foundation (NSF), Institute for Financial Management and Research (IFMR)

Giving cash for exercise is increasingly used to address chronic diseases like diabetes and hypertension, but its effectiveness may depend on tailoring targets to people with different activity levels. Researchers conducted a randomized evaluation to test the impact of offering a menu of exercise programs—allowing participants to self-select into personalized step targets—on daily walking and health among adults with diabetes and hypertension in urban India. Allowing participants to choose an exercise program and associated cash reward from a menu increased daily walking relative to being assigned a program with a fixed cash payment, without increasing costs.

Policy issue

Chronic lifestyle diseases such as diabetes and hypertension (high blood pressure) have become major issues in many parts of the world, leading to a decline in people's ability to work or perform daily activities, serious health problems, and even death. Not getting enough exercise is a significant contributor to diabetes and hypertension.

To address these trends, policymakers and insurers are turning to offering monetary rewards for exercise or healthy behavior, like the number of steps people take per day. Designing these programs is challenging because the right exercise goal varies from person to person. Someone who is less active might be motivated only by relatively a low daily step target, while someone who already has a healthy lifestyle might meet that same target without any incentive. Policymakers may wish to personalize individual targets, but this raises another concern: people might understate how active they are in order to receive easier targets. Can offering adults with diabetes and high blood pressure a menu of options for cash incentives tied to different step targets improve the effectiveness of exercise incentive programs without increasing costs—and ultimately improve their health?

Context of the evaluation

In 2019, nearly one in ten adults in India had diabetes and one in four had high blood pressure, and rates were continuing to increase. In the southern state of Tamil Nadu, high blood pressure contributed to nearly 22 percent of all deaths the same year.[1]

This study took place in Coimbatore, Tamil Nadu, a city of over 3.4 million people.[2] Participants were adults with self-reported diabetes (high blood sugar) or hypertension (high blood pressure). Thirty-one percent had been diagnosed with diabetes and 32 percent with hypertension. The average participant was 49 years old, and 37 percent of participants were women. Participants' average body mass index was considered obese. Before the study intervention started, participants walked an average of 7,230 steps per day, similar to average step counts for pedometer users across India.

The exercise incentive program in this study built on an existing Government of Tamil Nadu program that helped adults with diabetes and prediabetes exercise more and reduce their health risk. However, more than half of the payments in the earlier program rewarded activity that participants were already doing, suggesting that personalizing incentives could make the program more cost effective.



Men play cricket in Tamil Nadu, India.

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Details of the intervention

Researchers partnered with the Government of Tamil Nadu to conduct a randomized evaluation testing the impact of offering a menu of daily step-target programs on participants' daily step count and health among 6,882 adults with diabetes and high blood pressure in Coimbatore, India. All participants were given pedometers and asked to report their daily step counts to an automated phone system. Participants in the step target groups were offered mobile phone credit payments for meeting their daily step targets.

A total of 5,114 participants were individually randomized into one of several groups, with men and women and younger and older adults equally represented across groups:

1. **Choice step target group** (970 adults): Participants chose their own exercise program from a menu of three options with step targets of ten thousand, twelve thousand, or fourteen thousand steps per day, with corresponding payments of 16, 18, or 20 INR (US$0.23, $0.26, and $0.29 at the time of evaluation) per day of compliance. Higher targets came with higher payments, giving participants a financial incentive to choose a higher target if they were already more active.
2. **Low Fixed step target group** (826 adults): Participants were offered an exercise program paying 20 INR per day (US$0.29 at the time of evaluation) for meeting a ten thousand daily-step target.
3. **Medium Fixed step target group** (1,274 adults): Participants were offered an exercise program paying 20 INR per day for meeting a twelve thousand daily-step target. This served as the primary comparison group.
4. **High Fixed step target group** (847 adults): Participants were offered a program paying 20 INR per day for meeting a fourteen thousand daily-step target.
5. **Predetermined step target group** (990 adults): Participants were assigned to one of the three step targets (ten, twelve, or fourteen thousand steps) based on their measured baseline walking levels and paid 20 INR. People who walked less before the program were assigned lower targets and those who walked more were assigned higher targets.
6. **Monitoring group** (207 adults): Participants received pedometers and encouragement but no cash incentive, providing a baseline for measuring the effect of payments.

An additional 1,768 participants were assigned to secondary groups designed to explore how the choice menu worked, including groups that (i) chose from a menu where all three targets led to the same payment amount (509 adults) (ii) chose from a menu after receiving a recommendation from researchers (540 adults), and (iii) chose before measuring their baseline steps (719 adults).

From May 2019 to December 2021, researchers enrolled individuals on a rolling bases for four-week contracts to measure daily step counts using pedometer data. They also collected information on participants' health, including their blood sugar, blood pressure, body mass index, and waist circumference.

Results and policy lessons

Allowing participants to choose their own step target from a menu increased daily walking more than a one-size-fits-all program, at no additional incentive cost. This improvement occurred because participants selected programs that matched their walking preferences.

Walking: Participants in the Medium Fixed step target group walked approximately 528 more steps per day (five additional minutes) than those in the Monitoring group. Participants in the Choice group walked an additional 420 steps per day (four additional minutes) compared to the Medium Fixed group. Those who tended to walk less did just as well as people assigned a low fixed target, and better than those assigned a high target. Those who tended to walk more did about as well as people assigned a high fixed target, and better those given a low one.

Why choice worked: Study participants selected an exercise program that aligned with their actual walking habits: among those who walked the least before the program (in the bottom fifth of the step distribution), 80 percent chose the lowest step target. Among those who walked the most (in the top fifth of the step distribution), only 20 percent chose the lowest target. Choosing higher step targets led people who already walked more to take more steps, without additional pay. When all three targets paid the same amount, participants who walked more before the program were more likely to pick lower step targets. Participants in this equal-payment group showed no meaningful improvement in walking compared to the Medium Fixed group.

Health: Among 1,520 participants for whom blood sugar data was collected, every additional 1,000 daily steps walked led to a 7.23 milligrams per deciliter reduction in blood sugar, with larger reductions (12.5 mg/dl) among those with higher blood sugar before the program. Participant waist circumference also declined with additional steps, while body mass index and blood pressure were unchanged.

Costs: Average daily cash payments did not differ meaningfully between the Choice and Medium Fixed groups, meaning the increase in walking came at no additional incentive cost. When incorporating design and implementation costs, the estimated health benefits (1.3 INR per 100 steps, or about US$0.02 at the time of evaluation) outweigh the choice program's costs (0.11–1.01 INR per 100 additional steps). Assigning a program based on the number of steps taken before the program (the Predetermined step target group) was similarly effective, but less cost-effective at scale due to ongoing data collection requirements.

These results suggest that offering people a well-designed, incentive-compatible exercise program menu can substantially improve exercise program effectiveness for people with diabetes, hypertension, and related conditions in similar contexts.

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1. Selvavinayagam, T. S., Vidhya Viswanathan, Archana Ramalingam, Boopathi Kangusamy, Bency Joseph, Sudharshini Subramaniam, J. Sandhiya Sheela, et al. 2024. “Prevalence of Noncommunicable Disease (NCDs) Risk Factors in Tamil Nadu: Tamil Nadu STEPS Survey (TN STEPS), 2020.” *PLOS ONE* 19 (5): e0298340. https://doi.org/10.1371/journal.pone.0298340.

2. Coimbatore District, Government of Tamil Nadu. 2026. Coimbatore District, Government of Tamil Nadu. Accessed March 19, 2026. https://coimbatore.nic.in/.